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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/396,486 09/14/99 URBANO

J 9994-8US

000757 QM12/0829  
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EXAMINER

JAWORSKI, F

ART UNIT

PAPER NUMBER

3737

DATE MAILED:

08/29/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No.

09/396,486

Applicant(s)

Urban et al

Examiner

JAWORSKI

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 5/5, 12/21/00; 7/18/01.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,8,9
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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1. The attempt to incorporate subject matter into this application by broad reference to other applications as found on page 66 of the specification is improper because MPEP Section 608.01 (p) states that for purposes of disclosure completeness "...Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph...." .

Another way of stating this is that the Examiner is being placed in the circular situation that, not having access to the other co-pending applications by Serial No., the determination can't be made that the other applications are non-essential to this disclosure such that an issue of disclosure incompleteness does not exist. A disclosure adequacy rejection is lodged to avoid piecemeal prosecution and provoke resolution of this matter.

Claims 1 - 77 are rejected under 35 U.S.C. 112, para 1 as failing to provide an enabling disclosure for the reason set forth above.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Wright et al (US5685308) and Cole et al (US5617862), further in view of any of the references as listed in the tabulation below. (The reason for this unusual rejection format is that the Examiner in searching this art uncovered a variety of teachings concerning re-programmable ultrasound systems which suggests that the claiming here is excessively broad such that consideration in equally broad terms of FPGA technology as a whole within ultrasound systems appears to be the most effective way to refine issues and resolve this case.)

4. The Wright et al-Cole et al teachings represent a flexible re-programmable beamformer system of the prior art, see Wright et al discussion of reprogrammability in relation to central control C-104 and the Cole et al discussion of field programmable gate array implementation of the Fig. 7 transducer multiplexer scheme. This serves to evidence that it was known in general to use re-programmable logic devices including FPGAs in association with a flexible ultrasound beamformer system.

Since the prior art evidences re-programmable device (e.g. FPGA) usage in relation to nearly all aspects of imaging, it would have been obvious in view of any of the tabulated references to implement a system having functionality largely residing in same:

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**Patent****FPGA Application**

Imran et al (US6251073)

Element 106, Drivers, TGC, zoom, Doppler, gen. Sig. processing.

Smith et al (6241675)

Velocity/power Doppler and wall-filtering

Negrin et al (US6231510)

Controller 304 Video image assembly/zoom fnctn

Kemone et al (US62312508)

Element 114 control of back-end processing and display

\* Gilling (US6126601)

Elements 72, 92 I/O control within the DSPs (Fig. 3)

Doi et al (US5873824)

Digital image data including ultrasound (col.2 line 48)

Quantitative image texture analysis by using FPGA or stated equivalents (DRAM,ROM,EPROM,EEPROM, SRAM, Flash RAM, ASIC,GAL) in the computer

Motherboard

\* Muzilla (US5735797)

Output logic 56 selection of display parameters

Deitrich et al (US5568813)

Splice control block 84 for vector compounding

\* Snyder (US5520187)

Logic controller 50 (Fig. 3) for interfacing probe to display system's reconfigurable channels

Morrow (US5235985)

Element 40 interfaces microprocessor-CPU to system components.

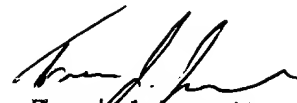
\* IDS 7-18-01

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Any inquiry concerning this communication should be directed to Examiner Francis J. Jaworski at telephone number (703) 308-3061.

FJJ:fjj

8-26-01



Francis J. Jaworski  
Primary Examiner